



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,136	07/07/2000	Tohru Nagano	JA999-118X	8446

33360 7590 01/24/2006

MARK D. MCSWAIN
IBM ALMADEN RESEARCH CENTER, IP LAW DEPT.
650 HARRY ROAD
CHTA/J2B
SAN JOSE, CA 95120

EXAMINER

HAN, QI

ART UNIT PAPER NUMBER

2654

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/612,136

Applicant(s)

NAGANO ET AL.

Examiner

Qi Han

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 7-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 07 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. This communication is responsive to the applicant's amendment dated 11/15/2005. Applicant amended claims 7, 11, 13, 16-18, 21, 25 and 27.

The examiner withdraw the claim rejection regarding claims 7-20 and 28 under 35 USC 112 2nd, because the applicant amended claims. The similar rejection for claims 21-26 will be sustained, based on the same reason described in the previous office action filed on 08/10/2005.

Response to Arguments

3. Applicant's arguments filed on 11/15/2005 with respect to the rejection of claims 7-28, under 35 USC 112 1st, have been fully considered but they are not persuasive.

In response to applicant's arguments regarding new matter issue for the previous amend claims 7-28, rejected under 35 USC 112 1st, that "the use of the additional word "configurable" simply means that the system can be configured to include a threshold" and "those skilled in the art would recognized that the inventor clearly possessed an invention in which ...", the examiner respectfully disagrees with the applicant's arguments and has a different view of the amended limitations. Firstly, it is noted that, as stated in the claim rejection, the amended limitations "in

Art Unit: 2654

which the related mutually dependent **relationships exceed a configurable threshold**” and “to identify related concepts which occur at a frequency greater than a **configurable threshold**” do not specifically described in the original specification. Secondly, the applicant cited case law is not applicable to the instance application, because no evidence in the original specification shows the instance application possesses the amended limitation(s). Thirdly, the applicant fails to provide specific evidence/fact in the original specification to support the amended limitations and the corresponding arguments. In fact, by reviewing the specification, including the referenced places provided by the examiner (the specification: page 5, lines 1-3) and provided by the applicant (the specification: Fig 8 and page 25), the examiner find nowhere in the disclosure to support the limitations and arguments, at all. Therefore the rejection is sustained.

4. Applicant's arguments filed on 11/15/2005 with respect to claims 7-28, under 35 USC 103, have been fully considered but they are not persuasive.

In response to applicant's arguments the prior art (Vaithyanathan) does not relate “the conversion of the received collection of data and does not teach or suggest converting all data received into a common format”, “equating a clause and a database is not reasonable”, and “does not to identify mutually dependent relationships as claimed” (the amendment: page 10, paragraphs 1-4), the examiner disagrees with the applicant’s arguments and has a different view of the prior art teachings and claim interpretation. It is noted that, by reviewing the previous rejection, the cited reference and the specification, the examiner believes the rejection is proper because the cited prior art discloses all argued limitations, based on broadest reasonable interpretation of the claims and best understood in view of the rejection under 35 USC 112 (see

Art Unit: 2654

the prior art rejection in the previous office action). Further, it is noted that the examiner made some modifications in the related claim rejection for reflecting the amended limitations and also for responding the applicant's arguments (see detail in the claim rejection below).

In response to applicant's argument that "Vaithyanathan (primary reference) is not properly combinable with Liddy (secondary reference)...", "neither of those two problem (addressed by Vaithyanathan and Liddy) is the same as the problem faced by the inventor of the present application which is mining data from information", and "that is not a proper motivation because in Liddy that related words having multiple meanings including in different languages" (the amendment: page 11-12), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instance case, it is noted that the examiner properly addressed the obviousness (motivation) for combining the cited references (see detail in the claim rejection below). In addition, it is noted that both dereferences teach their inventions to solve the same or similar problem or to have the same or similar capability of "the information retrieval and data mining" (Vaithyanathan: col. 2, lines 25-26), "document retrieval" and "mining large data sets" (abstract and col. 20, lines 59-60), which further supports the obviousness for the prior art combination.

In response to applicant's arguments that "Liddy neither teaches nor suggests the claimed limitation of extracting a concept..." and "Liddy does not deal with the claimed "concepts" at all" (the amendment: page 12, paragraph 2 to page 13, paragraph 1), the examiner disagrees with

Art Unit: 2654

the applicant's arguments and has a different view of the prior art teachings and claim interpretation. It is noted that Liddy discloses 'for each word (key word) in a sentence, identify (extract) the word which is assigned with one concept' (Liddy: Fig. 3A), which is read the claimed and argued limitations. In addition, Vaithyanathan's disclosure of 'identified words form a cluster summary indicative of the documents in that cluster (group) may also be read on the claimed "concept" with broadest reasonable interpretation of the claims, even though Vaithyanathan does not **expressly** disclose it.

For above reason, the claim rejection is sustained.

Drawings

5. The drawings are objected to because they do not comply with 37 CFR 1.84 or 1.152, see detail in the attached form PTO-948. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not

Art Unit: 2654

accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 7-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 7, the limitation “in which the related mutually dependent **relationships exceed a configurable threshold**” introduces new subject matter, because the original specification does not specifically describe the limitation (see the closet disclosure on page 5, lines 1-3). In addition, the limitation “to identify related concepts which occur at a frequency greater than a **configurable threshold**” also introduces new subject matter”, which lacks sufficient specificity in the original specification.

Regarding claims 21 and 27-28, the rejection is based on the same reason described for claim 7, because these claims recite the same or similar limitation(s) as claim 7.

Regarding claims 8-20 and 22-26, these dependent claims inherit all limitations of their parent claim(s).

Art Unit: 2654

Further, regarding claim 15, the recited limitation “identifying the groups in which the related mutually dependent relationships exceed a configurable threshold is achieved automatically through utilization of computer generated or user defined rules in which the configurable threshold is defined for each category”, also introduces new subject matter, which lacks sufficient specificity in the specification.

Further, regarding claim 17, the recited limitation “the identified groups in which the configurable threshold was exceeded to a user at a GUI”, also introduces new subject matter, which lacks sufficient specificity in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 21-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 21, in the preamble, the claim recites “to identify related **concepts** which occur at a frequency greater than a configurable threshold”, and in the body, the claim recite “identifying the groups including dependent **relationships** which occur at a frequency greater than a configurable threshold”, which conflict each other, so that the combined limitation is indefinite. As best understood, the limitations will be interpreted as “to identify related concepts which occur at a frequency greater than a threshold” and “identifying the groups including dependent relationships, in which the related concepts occur at a frequency greater than a configurable threshold”, respectively.

Regarding claims 22-26, these dependent claims inherit all limitations of their parent claim(s).

Claim Rejections - 35 USC § 103

8. Claims 7-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaithyanathan et al. (US 5,857,179) hereinafter referenced as Vaithyanathan, in view of Liddy et al. (6,006,221) hereinafter referenced as Liddy.

As per **claim 7**, as best understood in view of rejection under 35 USC 112 1st (see above), Vaithyanathan discloses computer method and apparatus for clustering documents and automatic generation of cluster keywords (title), comprising:

“receiving a collection of data, the collection of data comprise word” (Figs. 2, 5 and 6a, show the collected of document (received a collection); col. 10, lines 43-59, ‘the cluster summary data (also interpreted as received collection)’);

“converting the received data into a common format”; (Fig. 5 and col. 10, lines 43-59, ‘the cluster summary data may be presented ...to allow the user to select (corresponding to convert) the format (corresponding to common format) of the returned data, or to select a particular number of keywords or documents in each cluster summary (also corresponding to common format)’; col. 5, lines 20-35, ‘standardized set of format rules’, wherein the standardizing processing can also be interpreted as converting);

“combining the converted received data in to clauses of related data” (col. 5, lines 20-55, wherein the text after the ‘pre-processing’ is interpreted as combined “converted received data”; col. 10, lines 60-67 and figure 6a, ‘sentences 1-19 are analogous to document (the converted

Art Unit: 2654

document combined with standardized text format) into clauses or in a database', wherein the term "clauses" is broadly interpreted as phrases, clauses or sentences, since the applicant does not follow the conventional meaning of a clause in the specification (see page 15) and does not specifically provide his own definition either);

"attempting to associate a category with each word within each of the clauses" (Fig. 6a-6c and col. 11, lines 1-5, each word in the sentences 1-19 is assigned a category and a matrix is formed);

"identifying mutually dependent relationships between or among the categorized words, according to at least one rule defining mutually dependent relationships between categorized words", (col. 11, lines 33-62, this matrix is then clustered into three clusters 'using a k-means clustering algorithm' based on the relationship between the words in the sentences, 'using nearest-neighbor (mutual dependent relationship) rule', 'using the rules of thumb described above');

"grouping the identified mutually dependent relationships into groups of related mutually dependent relationships" (Fig. 6f and col. 11, lines 52-57, 'Clusters (the groups) I through III').

But, Vaithyanathan does not expressly disclose "extracting unique concepts associated with the identified groups of related dependent relationship, wherein the step of extracting concepts comprises recognizing the identified groups of related mutually dependent relationships in which the related concepts occur at a frequency greater than a threshold". However, the feature is well known in the art as evidenced by Liddy who discloses multilingual document retrieval system and method using semantic vector matching (title), wherein 'the term "document"...include ...one or more clauses, sentences, or paragraphs' (col. 3, line 65 to col. 4,

Art Unit: 2654

line 4), comprising 'to select (extract) the single most appropriate concept group from the multilingual concept database for all those input words' 'using three sources of linguistic evidence', including 'a word in the sentence has been tagged (identified) ...with only one concept group code... considered Unique' and 'and concept group codes ...more than a predetermined number (occurrence frequency is more than a threshold) of words within the sentence being processed... considered Frequentcodes', 'these two types of locally determined concept group codes are used as "anchors" in the sentence' (col. 11 line 39 to col. 12, line 7); 'combined and normalized correlation (mutually dependent relationship) between each concept', 'highest correlation value bigger than predetermined threshold', 'N-gram based probability of occurrence of each concept' (Figs. 3A-3B); 'the sublanguage relies on items such as function words, meta-text phrases...to recognize and extract the formal logical combination of relevance requirements'; which suggest the system has capability of implementing the functionality as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vaithyanathan by providing recognizing/extracting word with a concept group considered unique and/or concept groups with higher correlation than a threshold or a probability, as taught by Liddy, for the purpose of disambiguating the related words (Liddy: col. 12, lines 6-7) and/or finding highly relevant documents for searching (Liddy: col. 3, lines 25-28).

As per **claim 8** (depending on claim 7), Vaithyanathan in view of Liddy discloses "the categorized words identified as being in a mutually dependent relationship exist within separate clauses" (Vaithyanathan: Fig. 6f, col. 11, lines 52-56; Liddy: col. 6, lines 'matching ...the

Art Unit: 2654

conceptual- level contents’, ‘matching occurs based on the frequency and co-occurrence (also interpreted as mutually dependent relationship) of proper nouns in documents and queries’);

As per **claim 9** (depending on claim 8), Vaithyanathan in view of Liddy discloses “the separate clause exist within separate sentences” (Vaithyanathan: Fig. 6a, col. 11, lines 52-57; Liddy: ‘the document ...to include one or more clauses, sentences, or paragraphs (including separate clause)’).

As per **claim 10** (depending on claim 7), Vaithyanathan in view of Liddy discloses “the converting comprises conversion of the received collection of data into the same format, wherein the received collection of data is made up of various data formats” (Vaithyanathan: Fig. 5 and col. 5, line 18-35, his document collection and ‘...words following a standardized set of format rules (corresponding to same format)’; Liddy: col. 8, lines 48, ‘accepts raw, unformatted text and transfers this to a standard format (interpreted as same format)’).

As per **claim 11** (depending on claim 7), Vaithyanathan in view of Liddy discloses “the words comprise a coherent character string within the clauses” (Vaithyanathan: Figs 5 and 6A).

As per **claim 12** (depending on claim 7), Vaithyanathan in view of Liddy further discloses “...searching a category dictionary to identify a category which matches the key word” (Liddy: col. 11, lines 13-14, ‘mapping (searching) each word to all possible corresponding concept categories using the multilingual concept database (MCD) (interpreted as category dictionary); col. 14, lines 3-67, ‘monolingual hierarchical concept dictionary (MHCD)’ and ‘MCD both define concepts as a groups of synonyms’).

As per **claim 13** (depending on claim 12), Vaithyanathan in view of Liddy further discloses “the category dictionary is comprised of combination of original expressions, parts of

Art Unit: 2654

speech, concepts and categories, wherein the original expressions are equivalent to the key words, the parts of speech are a classification of the key words, the concept are replacement expressions of the key words and categories represent a larger group having the nature of the keyword” (Vaithyanathan: Figs. 6A and 6F and col. 5, lines 38-60; Liddy: col. 10, lines 53-67, ‘MCGRE (multilingual concept group retrieval engine), accept... part-of-speech tagged, input text (original expression) and retrieves from the multilingual concept database any and all of the concept groups...’; col. 9, lines 7-50, ‘Part of Speech (POS) tagger’, ‘identify various substantive words (key words)’, ‘concept-level categories’; col. 11, lines 18-33, ‘each concept group is a collection of words or phrases (key words)... that are conceptually synonymous or near-synonymous (replacement expressions of the key words)’; col. 14, lines 3-67, ‘monolingual hierarchical concept dictionary (MHCD)...define concepts as a groups of synonyms’; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Vaithyanathan and Liddy these teachings to providing a database or dictionary having above mentioned elements, for the purpose of disambiguating the related words (Liddy: col. 12, lines 6-7) and/or finding highly relevant documents for searching (Liddy: col. 3, lines 25-28)).

As per **claim 14** (depending on claim 7), Vaithyanathan in view of Liddy further discloses “the mutually dependent relationships are determined according to rules applied to keywords and their associated categories within a clause” (Vaithyanathan: Figs. 6f and 6g and col. 11, line 32 to col. 12, line 7, ‘nearest-neighbor rule’, ‘using the rules of thumb described above’).

As per **claim 15** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st, the limitation is interpreted as “identifying the groups is achieved automatically through utilization of computer generated or user defined rules is defined for each category”. The rejection is based on the same reason described for claim 14, because the rejection for claim 14 covers the same or similar limitation(s) of claim 15.

As per **claim 16** (depending on claim 7), Vaithyanathan in view of Liddy further discloses “the [configurable] threshold is provided manually by a user for each of the identified groups of mutually dependent relationships in response to the user being presented a display of all the groups of mutually dependent relationships, at a GUI” (Liddy: Fig 2 and col. 8, lines 15-16 and col. 20, lines 16-40, ‘GUI 250’, ‘presenting the result to the user’, ‘allows users to interactive with the system ...’, which suggests that the system is capable of implementing the functionality as claimed).

As per **claim 17** (depending on claim 7), as best understood in view of rejection under 35 USC 112 1st (see above), the limitation is interpreted as “presenting identifying the groups to user at a GUI”. The rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 17.

As per **claim 18** (depending on claim 7), the rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 18.

As per **claim 19** (depending on claim 7), the rejection is based on the same reason described for claim 7, because the rejection for claim 7 covers the same or similar limitation(s) of claim 19.

As per **claim 20** (depending on claim 7), the rejection is based on the same reason described for claim 16, because the rejection for claim 16 covers the same or similar limitation(s) of claim 20.

Claims **21-28** are the same in scope and content as claims 7-20 above and therefore are rejected under the same rationale.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

Mail Stop ____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to: 571-273-8300, (for formal communications intended for entry)

Or: 571-273-8300, (for informal or draft communications, and please label "PROPOSED" or "DRAFT")

Art Unit: 2654

If no Mail Stop is indicated below, the line beginning Mail Stop should be omitted from the address.

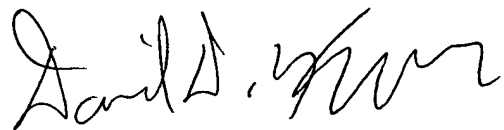
Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

U.S. Patent and Trademark Office
Customer Window, Mail Stop _____
Randolph Building
Alexandria , VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

QH/qh
January 5, 2006



DAVID D. KNEPPER
PRIMARY EXAMINER